1146-37 Prognostic Impact of No ST Segment Elevation Resolution in Acute Myocardial Infarction Complicated by Cardiogenic Shock

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Background : ST segment resolution (RST), during fibrinolysis therapy (FT) for acute myocardial infarction (AMI), is a good marker of myocardial reperfusion. The in-hospital mortality increases with time to reperfusion when cardiogenic shock (CS) complicates AMI.
Objectives: The aim of this study is to assess the no-RST during prehospital fibrinolysis for ST segment elevation myocardial infarction (STEMI) complicated by CS as an early predictor of mortality for triage.
Method : In a cohort of 643 patients, receiving prehospital FT for STEMI (pain to FT, mean time 120mn), 39 patients had STEMI complicated by CS. ECG was performed prior starting the FT, baseline ECG, and on ICU admission, admission ECG (FT to ICU, mean time 55mn).Two classes of RST were defined : no resolution (RST < 30%), partial or complete resolution (RST ≥30%).ICU mortality was investigated for each class of RST within 30 days.
Results : Results are shown in the table below. No-RST on admission ECG is significantly (p<0.05) correlated to a higher ICU mortality rate when STEMI is complicated by CS .
Conclusion : No-RST, during the first hour of FT for STEMI complicated by CS, predicts no myocardial reperfusion and high risk of ICU death within 30 days. This clinical marker is easy to perform at bedside, and should participate to an early scoring system for decision making.

	STEMI patients	CS patients	STEMI mortality(%)	CS mortality (%)
No-RST	231	22	20 (8.7%)	9 (40.9%)
Partial or Complete RST	412	17	21 (5.1%)	0 (0%)
Total	643	39	41 (6.4 %)	9 (23.1%)

POSTER SESSION

1147 Surgery for Coronary Artery Disease

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Presentation Hour: 10:00 a.m.-11:00 a.m.

1147-38 Passive Ventricular Restraint With Nitinol Mesh Attenuates Remodeling Following Acute Myocardial Infarction

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Background: Cardiac failure can occur after a large myocardial infarction due to left ventricular remodeling. This study examines the effects of a novel compliant ventricular restraint device placed in sheep after anterior transmural infarction.
Methods: The device under study is a custom-shaped nitinol mesh designed to fit over both ventricles and exert a restraining force when stretched (Paracor, Inc.) Fourteen adult female sheep were studied, with half serving as controls. Cardiac MRI scans and hemodynamic measurements were completed before and six weeks after infarction from ligation of the anterior descending and second diagonal coronary arteries. Treatment animals received passive ventricular restraint concurrently with LV infarction, all devices being implanted through a left thoracotomy and sutured to the AV groove. Differences between groups were detected using unpaired t-tests. Data are presented as mean ± SD.
Results: Left ventricular dilatation and hypertrophy were significantly reduced in the passive restraint group relative to control. Increases in LV end-diastolic volume index were reduced by a factor of four with application of the device, (0.83 ± 0.50 vs 0.20 ± 0.41 mL/kg, p < .03). Likewise, end-systolic volumes of mesh hearts increased only half as much as controls (0.90 ± 0.38 vs 0.43 ± 0.28 mL/kg, p < .03). LV mass index increased by 7% in control animals following infarction in contrast to a 13% *decrease* in the device group (0.14 ± 0.19 vs -0.25 ± 0.36 g/kg, p < .03). LV dp/dt was higher in the device group after infarction (1304 ± 213 vs 1002 ± 118 mmHg/s, p < .05), and mean arterial pressures tended to be higher (89 ± 17 vs 69 ± 13, p = .09). When compared to normal baseline, no significant change in LV or PA end diastolic pressures was detected with the device. No gross or microscopic evidence of epicardial injury was found.
Conclusion: Nitinol mesh attenuated remodeling and improved LV function following acute myocardial infarction in sheep without evidence of restriction or injury to epicardial structures.

1147-39 Low Mortality in Ischemic Cardiomyopathy Treated With Coronary Artery Bypass Grafting Despite Negative Viability Study

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Background: Coronary revascularization is often used to treat patients with ischemic cardiomyopathy. However, patients with ischemic cardiomyopathy and negative myocardial viability studies have been increasingly managed medically because of doubts regarding the benefits of revascularization in this population.
Methods: We reviewed all patients from 1995 to 1999 with ejection fraction ≤ 0.35 who underwent PET rest and stress (IV dipyridimole) testing with rubidium-82 and ^{18}FDG prior to a decision regarding revascularization. Patients with severe coronary artery disease but negative viability studies (scar only, no ischemia or hibernation) who subsequently underwent CABG were analyzed. Patients who underwent CABG and concomitant valvular surgery were excluded.
Results: Ten patients (7 Males, 3 Females) with a mean age of 68 ± 8 years and mean ejection fraction of 0.24 ± 0.05 were analyzed. During a mean followup of 36 ± 18 months (range 15 to 70 months), survival was 90%.
Conclusion: In an elderly population with severe left ventricular dysfunction, coronary artery bypass grafting despite a negative viability study is associated with a very low mortality over a three year followup period. A randomized trial is needed to study this strategy directly against medical therapy.

1147-40 Noninvasive Assessment of Internal Thoracic Artery Graft Patency by Evaluating Left Anterior Descending Flow With a New Transthoracic Ultrasound Technology

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Background: Transthoracic echocardiography (TTE) is a standard method to evaluate the wall motion in patients (pts) undergoing coronary artery bypass grafting(CABG). However, it has not been established to examine the bypass graft. The aim of this study is to evaluate a new TTE method which examines the graft patency by measuring the forward flow of the left anterior descending coronary artery(LAD) before and after the CABG. **Methods**: Fifty-nine pts (66±8 years) undergoing CABG between August 2000 and August 2001 were studied. The grafts anastomosed to LAD were left ITA in 50 pts, right ITA in 9 pts. Before CABG, Doppler velocity profiles of distal LAD were recorded with transthoracic Doppler echocardiography (SONOS 5500;Hewlett Packard, and 12-MHz sector probe). The diameters of LAD(cm), total velocity time integrals (VTI)(cm), systolic VTI and diastolic VTI, and heart rates(bpm) were measured. LAD forward flow (ml/min) was obtained from the product of velocity time integral multiplied by the cross-sectional area of LAD and heart rate. The diastolic-to-systolic VTI ratios were calculated. Three weeks after CABG, LAD forward flow in the distal portion of the anastomosis was obtained by the same method. This flow included the native flow and the bypass flow. Simultaneously the graft patency was evaluated by the angiography. **Results:** Overall success rate of measuring the LAD flow by this method was 69% preoperatively and 88% postoperatively. In 19 pts, in which all parameters were obtained both pre- and post-operatively, LAD forward flow increased significantly from 21.8±21.2 ml/min to 40.9±22.1 ml/min (p<0.0001) and the diastolic-to-systolic VTI ratios also increased significantly from 3.33±1.62 to 5.30±2.92 after CABG (p<0.03). These results indicated the significant increase in the LAD flow during diastolic phase. Postoperative angiography showed excellent patency at the anastomosis site in all pts. This result correlated with those of TTE. **Conclusion:** This new TTE method can evaluate LAD flow easily before and after the CABG and may provide noninvasive and useful information about the graft patency.

1147-41 The Effect of Nonfatal Perioperative Cardiac Events on Long-Term Mortality or Cardiac Readmission

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Background: The purpose of this study was to determine the effects of non-fatal perioperative cardiac events (low output syndrome [LOS] and myocardial infarction by Q-wave [ECG-MI] or enzyme criteria [CKMB-MI]) on late survival or event-free survival after coronary artery bypass graft surgery (CABG). **Methods:** The Warm Heart Trial data was merged with administrative databases containing survival and hospital readmission information. **Results:** Follow-up was achieved for 94% (1,635) of the original subjects. At 101 months late survival was less in patients with, versus those without, a non-fatal perioperative event (79.7 +/- 2.8% vs. 86.1 +/- 1.1%, p<0.0001). Predictors of late mortality by Cox proportional hazards models were renal insufficiency, left ventricular dysfunction, older age, diabetes and redo CABG. Use of the left internal thoracic artery was protective. Events that were associated independently with reduced late survival were CKMB-MI (adjusted relative risk 2.1, 95% confidence interval 1.5-2.9, p<0.0001) and LOS (adjusted relative risk 1.6, 95% confidence interval 1.0-2.3, p=0.04). Event-free survival was less in patients who had a non-fatal perioperative event (62.6 +/- 1.6% vs. 55.0 +/- 3.5%, p<0.0001). Risk factors for event-free survival were those for mortality alone, plus urgent surgery and female gender. Non-fatal CKMB-MI had an independent adverse effect on late results (adjusted relative risk 1.7, 95% confidence interval 1.4-2.1, p<0.0001). Cardioplegia type did not affect early, late or event-free survival. **Conclusions:** Non-fatal perioperative cardiac events were associated with reduced survival and event-free survival after CABG surgery. LOS and CKMB-MI had a greater impact than ECG-MI.

1147-42 Minimally Invasive Surgical Treatment of Atrial Fibrillation Using Bipolar Radiofrequency on the Beating Heart

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INTRODUCTION: Current transvenous and epicardial treatments of atrial fibrillation (AF) using unipolar radiofrequency (RF) catheters have had poor results primarily due to their inability to consistently produce transmural lesions. These catheters lack any feedback regarding lesion transmurality, which may lead to multiple applications, extended ablation